AMENDMENTS

In the Claims

Marked Up Version Of The Pending Claims under 37 C.F.R. 1.121(c)(1)(ii): In accordance with 37 C.F.R. 1.121(c)(1)(ii), the Applicant submits the following marked up version only for claims being changed by the current amendment, wherein the markings are shown by strikethrough (for deleted matter) and/or underlining (for added matter):

1. (currently amended)A system comprising:

a pulse width discriminator operable to couple to a data transmission channel, receive a signal from the transmission channel, and detect the signal at a correct sub-slot location,

wherein the signal has combined forward and conjugate pulse positions;

a clock operably coupled to the pulse width discriminator;

a demultiplexer operably coupled to the pulse width discriminator and operable to de-multiplex the pulse stream in the signal into corresponding sub-slot positions;

a pulse positioner operably coupled to the demultiplexer;

a conjugate counter operably coupled to the pulse positioner and operbly coupled to the clock;

a forward counter operably coupled to the pulse positioner and the clock;

a common slot pulse sorter operably coupled to the conjugate counter and the forward counter;

a data conjugator operably coupled to the conjugate counter;

a data combiner operably coupled to the data conjugator and the forward counter; and

a digital-to-analog converter operably coupled to the data combiner,

wherein the system reconstructs an original signal sample from the forward and conjugate pulse positions.

2. (previously presented)The system according to claim 1, wherein the forward and conjugate pulse positions are generated by a mono shot pulse generator.

3. (currently amended) The system according to claim 1, wherein ~~the pulse positioner further comprises: a pulse positioner operably coupled to the demuliplexer through three lines~~the digital-to-analog converter is operably coupled to the clock.

4. (previously presented)The system according to claim 1, further comprising:

a low-pass filter operably coupled to the digital-to-analog converter to generate an analog base band signal from the digital-to-analog converter.

5. (currently amended)The system according to claim 1, wherein the system adapts the signal between the forward and conjugate pulse positions in the signal.

6. (previously presented)The system according to claim 1, wherein the signal has a thin pulse for forward pulse position coding and a relatively thicker pulse for conjugate pulse position coding.

7. (currently amended)The system according to claim 1, wherein the system [[re]]combines the forward and conjugate pulse positions into a digital output.

8. (currently amended)A method ~~for transmitting mass quantities of digital data through a data transmission channel at high rates of speed in a communication system~~ comprising:

splitting input digital data bits/samples into a plurality of data bit/sample sets; and

encoding forward and conjugate pulse positions over a[[the]] data transmission channel using forward and conjugate time position converters,

wherein the encoding includes adapting the plurality of data bit/sample sets by separating the plurality of data bit/sample sets into the forward and conjugate pulse positions over the data transmission channel,

wherein a first ~~k-bit~~ representative pulse of the forward pulse position is positioned in a forward manner and a second ~~k-bit~~

representative pulse of the conjugate pulse position is positioned on a conjugate pulse ~~location~~ within a[[the]] same space, and

wherein a thin pulse of the forward pulse position is used for forward pulse position coding and a relatively thicker pulse of the conjugate pulse position is used for conjugate pulse position coding.

9. (currently amended)The method according to claim 8, wherein the thin pulse is generated by the[[a]] forward time position converter and the thicker pulse is generated by the[[a]] conjugate time position converter.

10. (previously presented)The method according to claim 8, wherein the forward and conjugate pulse positions are generated by a mono-shot pulse generator.

11. (currently amended)A method comprising:

generating a trailing-edge digital pulse-width modulated signal from a digital input signal by comparing a sampled signal to~~against~~ a negative slope ~~linear~~ staircase signal having a number of steps, the negative slope staircase signal occupying a[[the]] same intra sample time span of the sampled signal;

generating a leading-edge digital pulse-width modulated signal from the digital input signal by comparing the sampled signal to a positive slope staircase signal having the same number of steps, ~~wherein a reference staircase is of positive slope having the same number of steps~~ and occupying a[[the]] same intra sample time span[[frame]] of the negative slope staircase signal;

generating a position indicating pulse for each modulated edge of the tailing edge and leading edge of the digital pulse-width modulated signals, yielding a plurality of pulse positions;

multiplexing the plurality of pulse positions into forward and conjugate positioned pulses of different pulse widths;

detecting equivalence between the input signal and the[[a]] negative slope staircase signal followed by a negative edge triggered mono-stable, to produce a linear voltage-to-pulse position conversion characteristic; and

generating conjugate[[d]] positioned pulses by generating the[[a]] leading edge digital pulse-[[ ]]width modulated signal and by generating a subsequent~~followed by a~~ positive edge triggered mono-stable that differentiates modulated edges of leading edge digital pulse-width modulated signal[[s]].

[[.]]

12. (currently amended)The method according to claim 11, wherein a thin pulse of the forward positioned pulse is used for forward pulse position coding and a relatively thicker pulse of the conjugate positioned pulse is used for conjugate pulse position coding.

13. (currently amended)The method according to claim 11, wherein the forward and conjugate positioned pulses are generated by a mono-shot pulse generator.

14. (currently amended)The method according to claim 11, wherein [[the]]the method further comprises generating the positive slope

staircase signal~~s for leading edge digital pulse-width modulated signal~~s ~~further comprises:~~

by charging a capacitor with a constant current source~~ through a programmable timing generator controlled high frequency switch~~.

15. (currently amended)The method according to claim 11, wherein the ~~forward and conjugate pulse is co-located and the~~ method further comprise[[s]]:

generating the positive slope staircase signal by charging a capacitor with a constant current source through a programmable timing generator controlled high frequency switch~~a third pulse width, which is different and larger, compared to the forward and conjugate pulse code widths~~.

16. (currently amended)The method according to claim 11, wherein a[[n]] forward positioned pulse converter is operable to use a thin pulse of the forward positioned pulse for forward pulse position coding~~encoder is operable to adapt the digital pulse-width modulated signal between the forward and conjugate pulse positions~~.

17. (currently amended)The method according to claim 16, wherein ~~encoder~~ is operable to use a thin pulse of the[[for]] forward [[pulse]]positioned pulse ~~coding~~for forward pulse position coding and a ~~relatively thicker pulse for~~ conjugate [[pulse]]positioned pulse converter is operable to use a relatively thicker pulse of the conjugate positioned pulse for conjugate pulse position coding.

18. (currently amended)The method according to claim 11, wherein the forward and conjugate <u>positioned </u>pulses are [[re]]combined into digital output.

19. (previously presented)The method according to claim 11 further comprising:

converting an analog input signal into the digital input signal.

20. (previously presented)The method according to claim 19 further comprising:

splitting the digital input signal into a plurality of data bit/sample sets.